

ABSTRACT OF THE DISCLOSURE

A cooling system for electrical coils, such as a coil in a magnetic resonance tomography apparatus, has a heat dissipation device with a fluid and a tempered reservoir for the fluid. The fluid is thermally coupled to the coil and the tempered reservoir is temperature-regulated to maintain the fluid at a fluid temperature and a fluid pressure that are in the immediate proximity of the critical point of the fluid. The cooling system is also suitable for cooling shim iron in a magnetic resonance tomography apparatus, in which case the coupling is in thermal communication with a container for the shim iron.